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# **OTF CCSDS SM&C Interoperability Prototype**

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# Project Definition

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- Description:
  - Demonstrate interoperability between two space flight Mission Operations Centers (MOC).
  - Emulate telemetry, actions, and alert flows between the two centers.
  - One framework uses a COTS C3I system that uses CORBA to interface to the local OTF data network.
  - Second framework relies on current Houston MCC frameworks and ad hoc clients.
  - Messaging relies on SM&C MAL, Core and Common Service formats.
  - Transport layer uses AMS.
  - Centralized SM&C Registry uses HTTP/XML for transport/encoding.



# Project Status

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- Description:
  - Down to one COTS C3I vendor.
  - Implementation uses C/C++, Python, Java, CORBA, WSDL, XML, Java Swing, PyGTK, gSOAP, SOAPy/ZSI.
  - SM&C Registry (Directory Services) is placed globally on the web.
    - The cross registration problem is avoided.
  - SM&C Login is deferred – no authentication is needed.
    - No authorization code required.
  - Defer AMS RAMS gateways – just use two AMS cells.



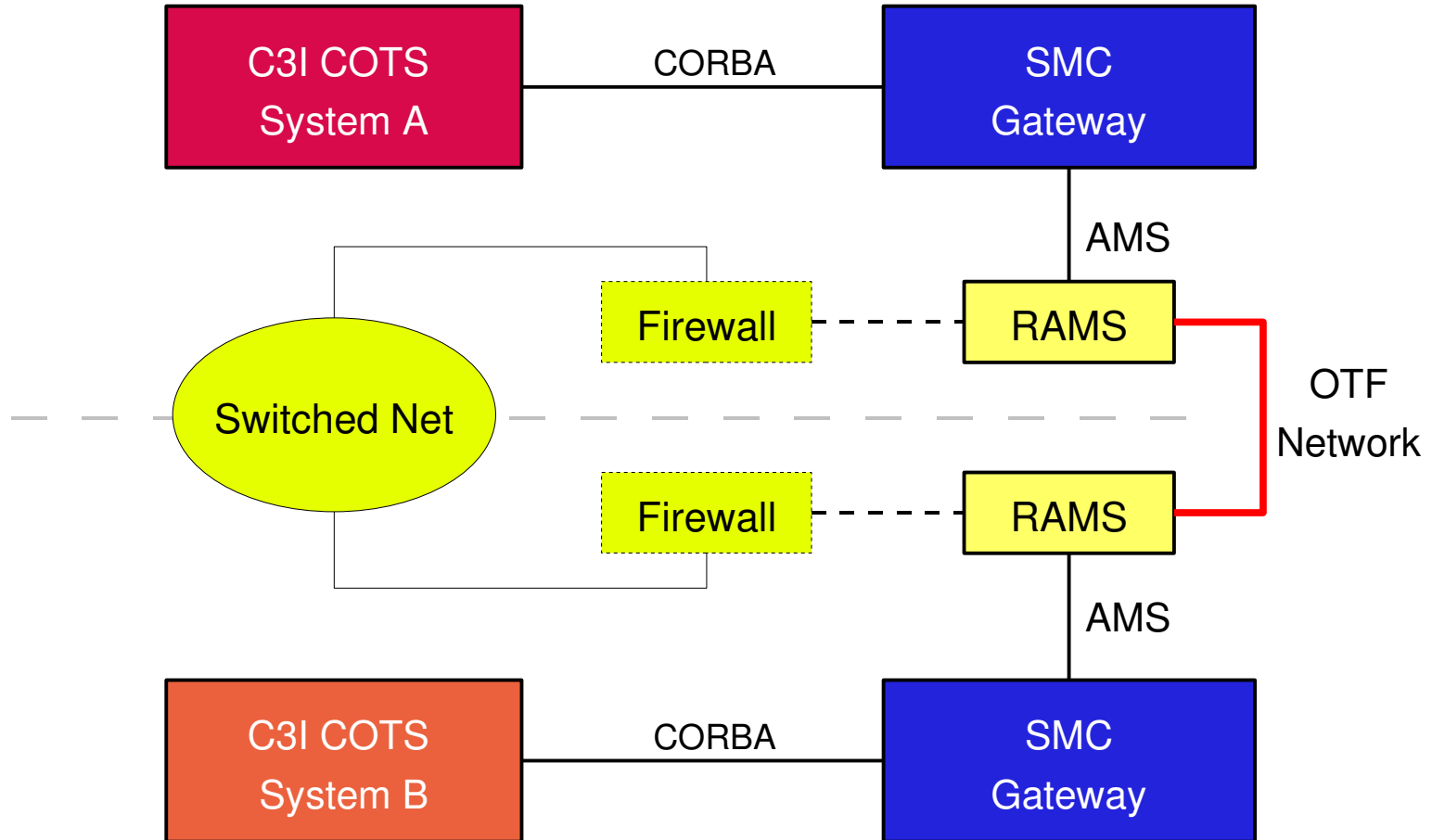
# Issues

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- Telemetry:
  - Data cycles and time homogeneity.
- Actions:
  - Precheck is not used.
- Login Service:
  - What common encryption standard?
    - Symmetric, yet in the public domain.
  - Cross authentication.
    - Trust anchor approach.
  - Directory Services without login.

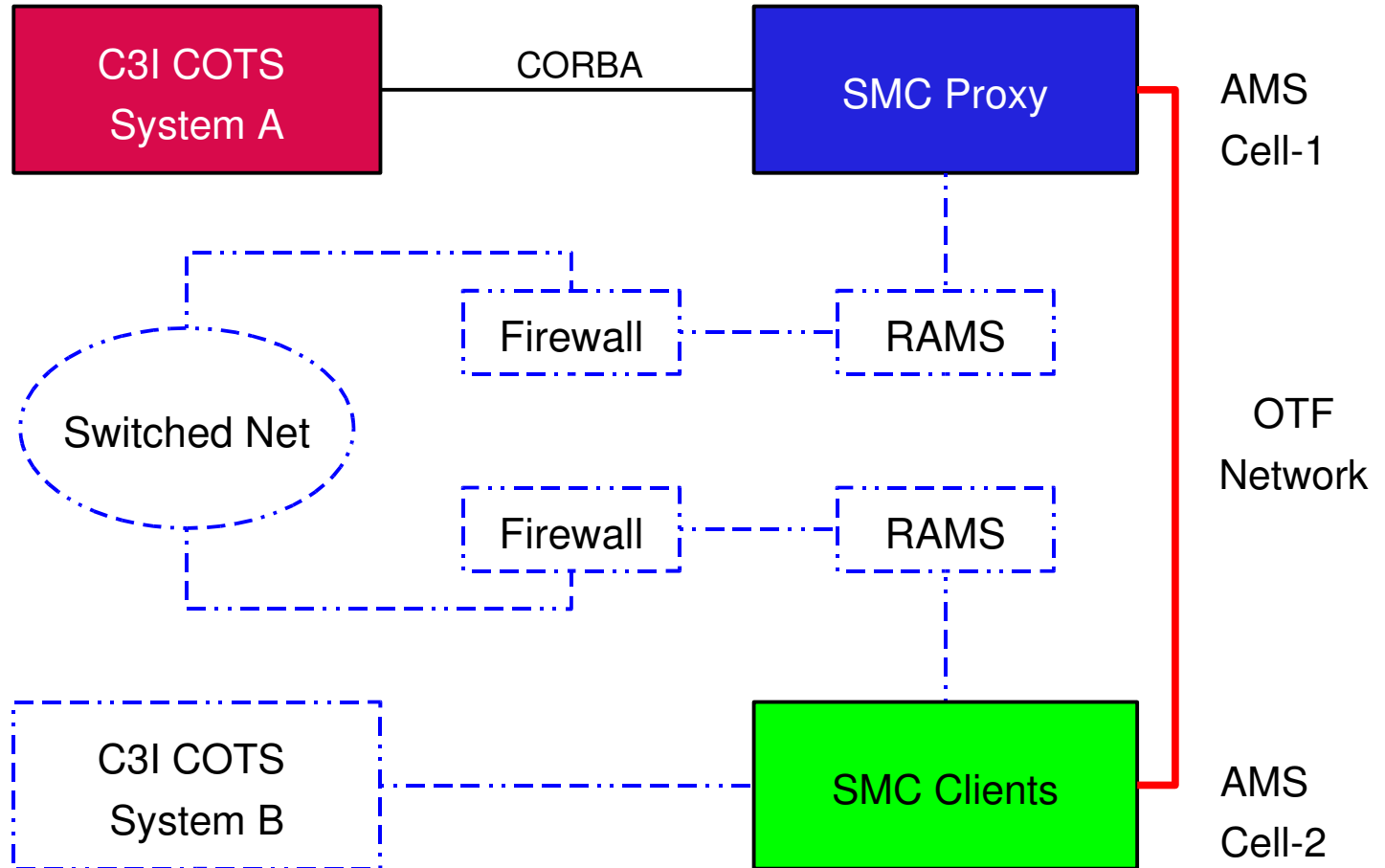


## Phase I Prototype – PLANNED



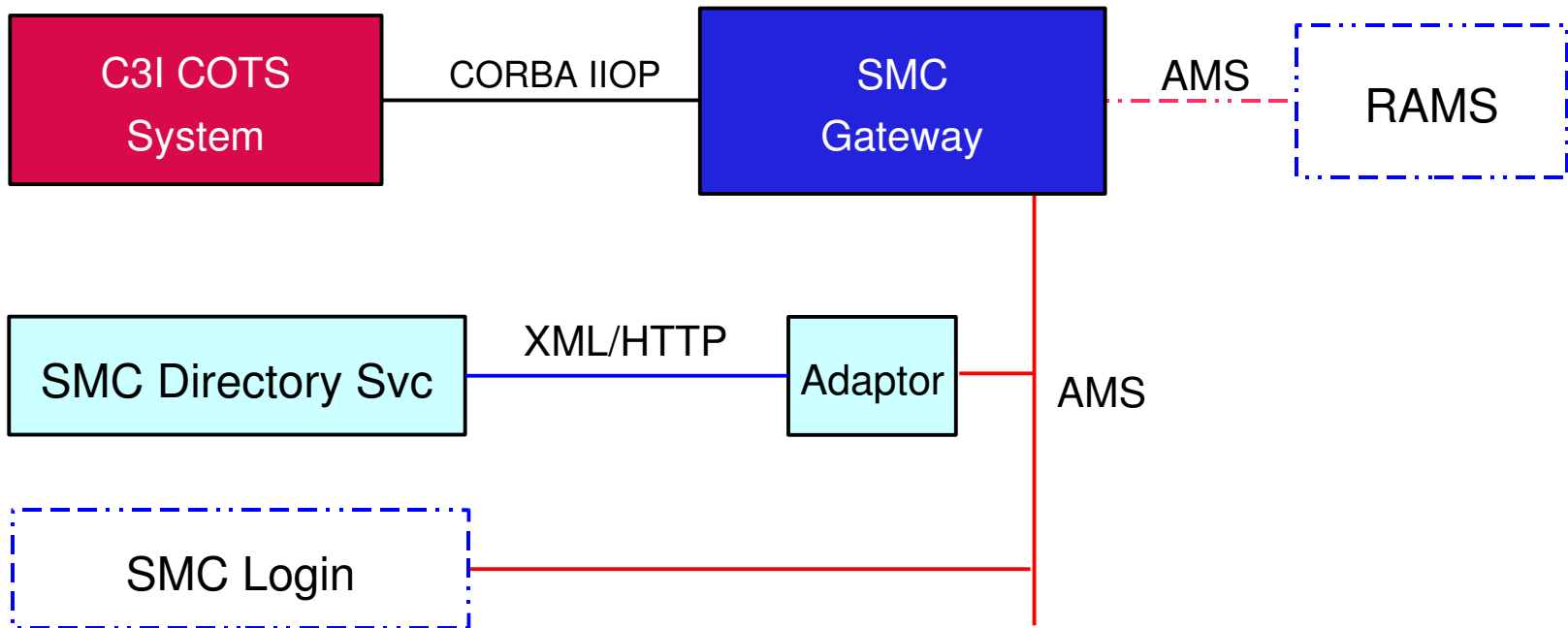


## Phase I Prototype – ACTUAL



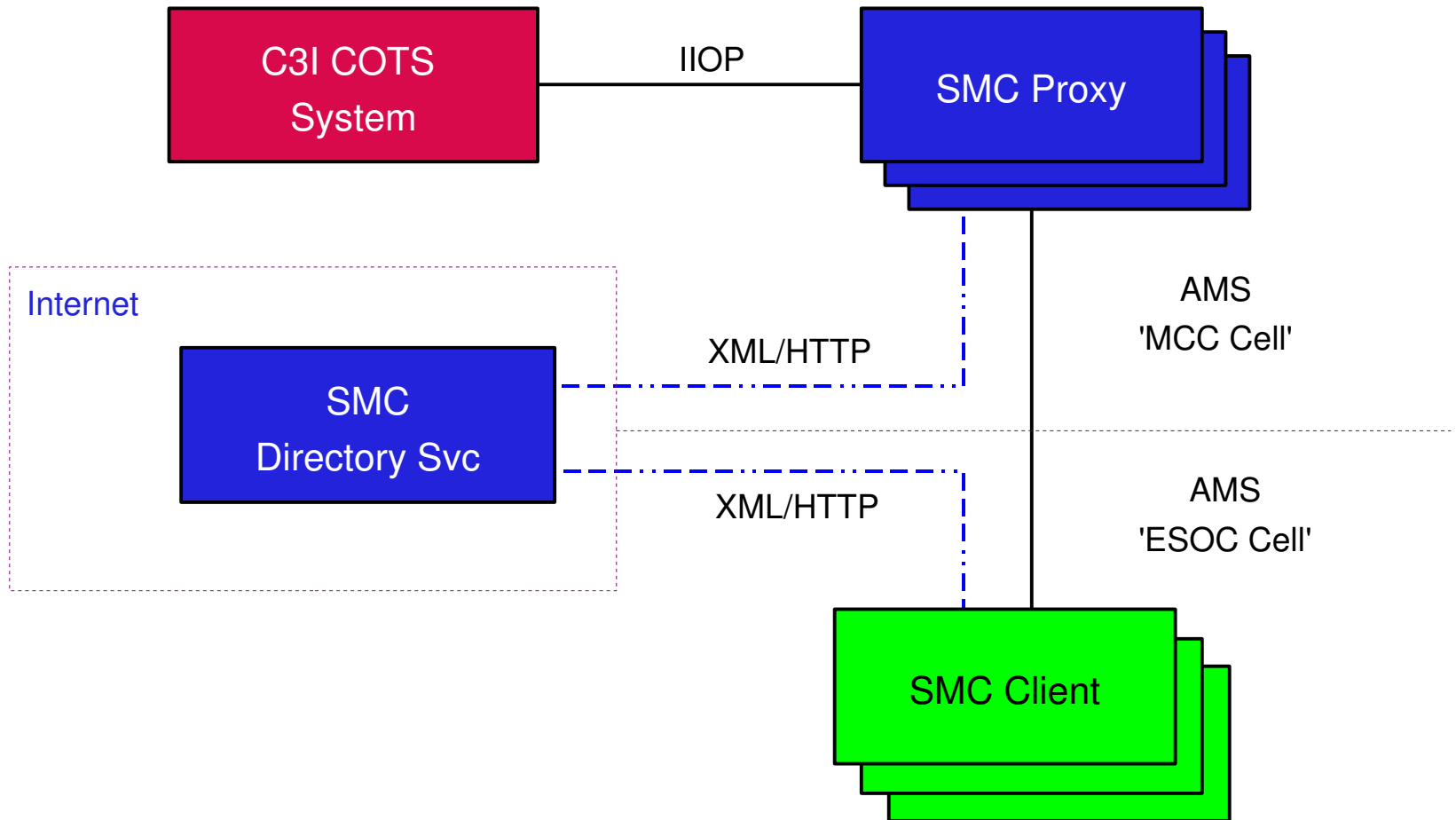


# External Interfaces





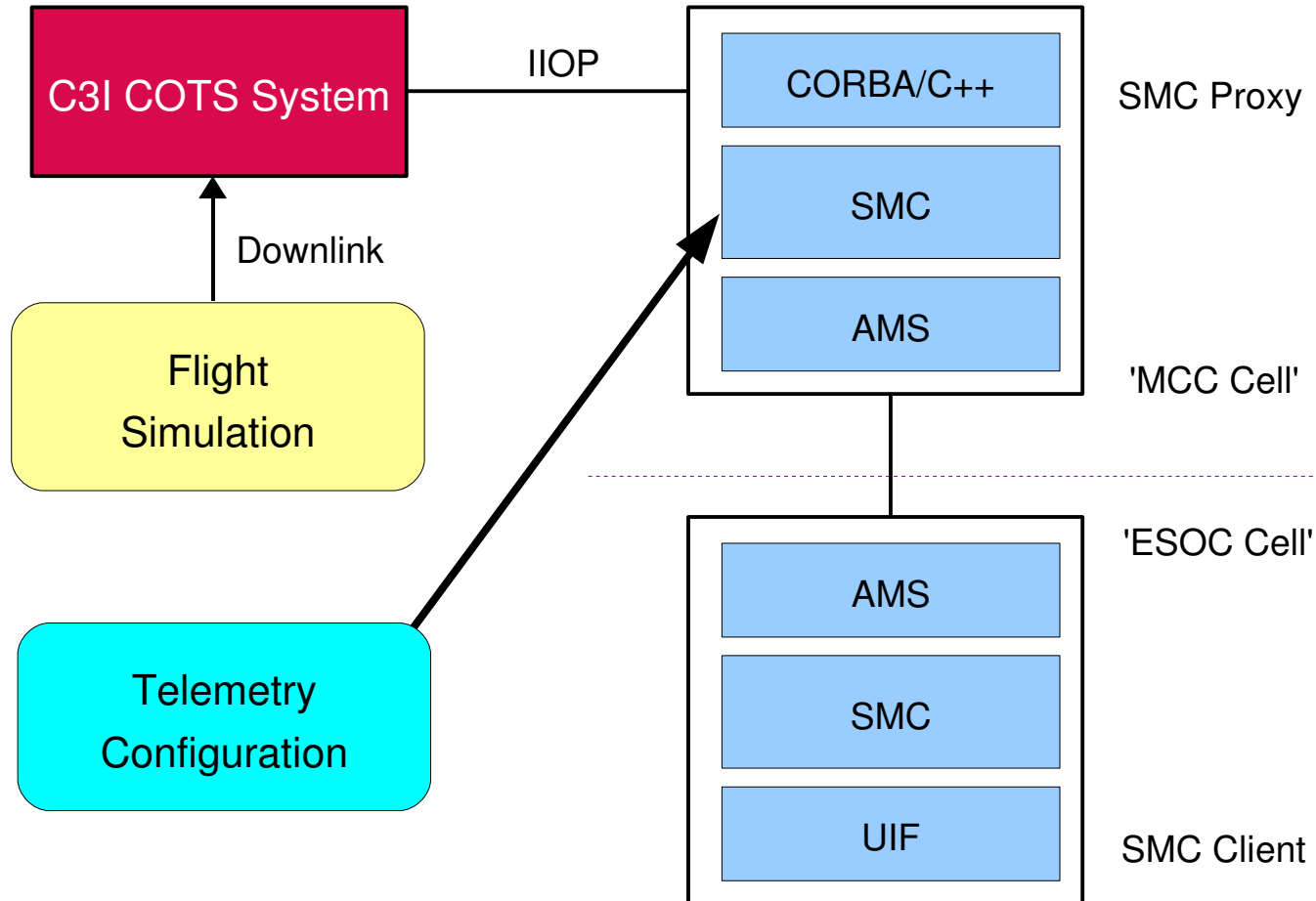
# Current OTF Phase I Implementation





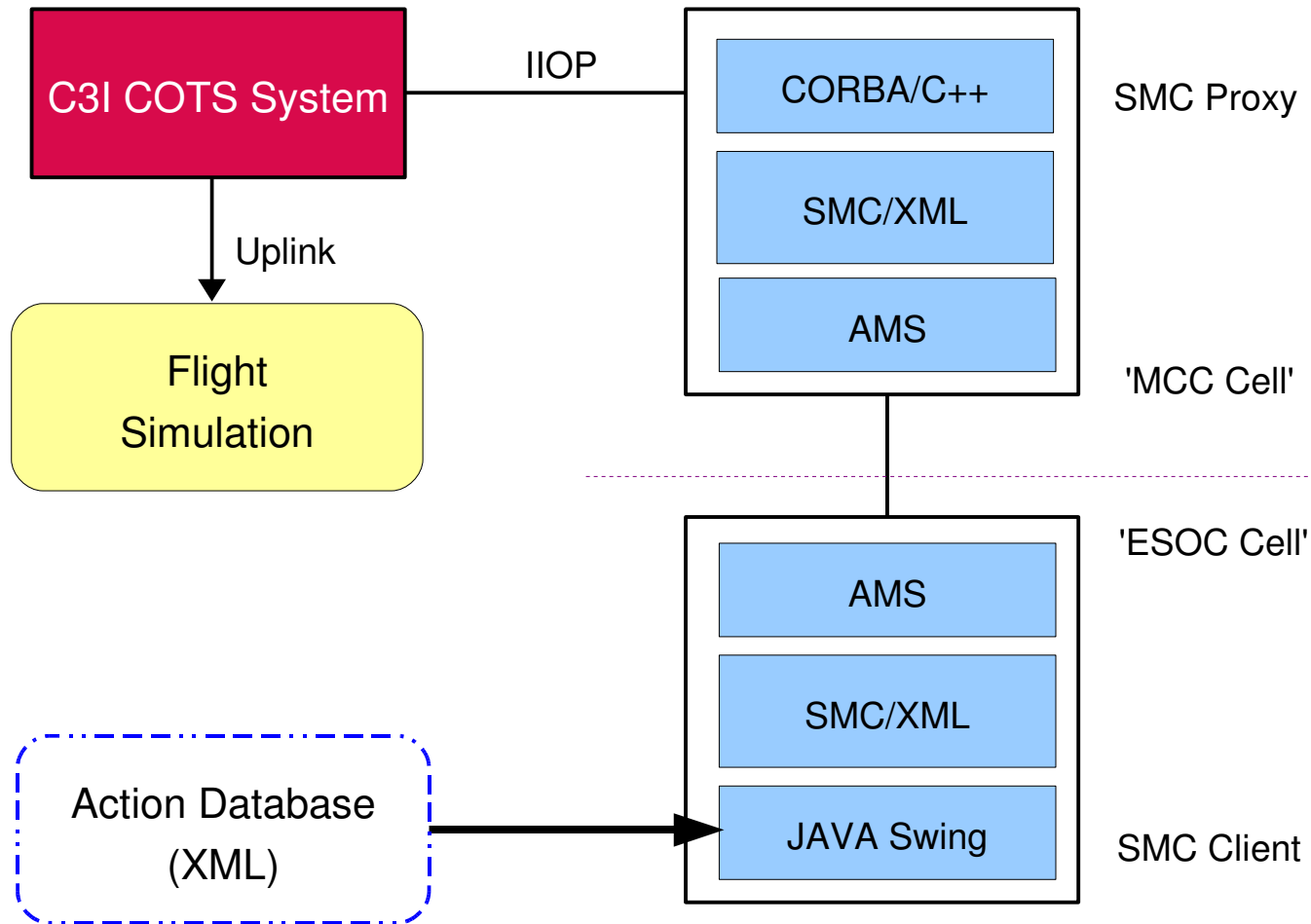


# SMC Telemetry





# SMC Actions





# SMC Alerts

